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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,946	08/22/2001	Gary E. Welch	99/007A	9682

7590 07/15/2004

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EXAMINER
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NAKHJAVAN, SHERVIN K

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 07/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/934,946

Applicant(s)

WELCH ET AL.

Examiner

Shervin Nakhjavan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 8 is/are allowed.
- 6) ☒ Claim(s) 1, 5, 10 and 11 is/are rejected.
- 7) ☒ Claim(s) 2-4, 6 and 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 9 is objected to because of the following informalities: there is no step e) in claim 7. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrases "said intensity measurement" and "said luster measurement" in claims 10 and 11, respectively, do not appear in the claims. Therefore, these citations are vague and confusing because it is unclear what feature or element is further limited by this language.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka et al. (Form 1449, Item AN) in view of Eilertsen et al. (Automatic image analysis of Coke texture).

Regarding claim 1, Matsuoka teaches, a method for testing a petroleum product produced during refining to classify said product, said method comprising the steps of: a) obtaining and preparing a representative sample of said product (page 238, section 2, Lines 1-4, where a representative samples of same product but of different sizes are prepared); b) forming a digital image of said sample with a scanner (Section 2, Lines 7-10, where a CCD scanner has been used to generate a pixeled or digital image of the products); and processing said digital image by extracting and filtering said digital image to produce a representative luster measurement of said sample (Section 2, Line 7 through Section 3, Line 9, where upon processing of the captured image and classifying of the pixels, the average value of the intensity of *reflected light* was is calculated from histogram as shown in figures 3A,B wherein this value is the luster measurement of the sample or product);

Matsuoka teaches limitation of claim 5, method further including the step of repeating all the steps for successive samples and designating each sample as to tow or high CTE (Section 4, Lines 14-20, where the same sample of different sizes has been classified for high or low CTE).

While Matsuoka teaches the invention of the claims above, Matsuoka fails to specifically teach filtering of the digital image of the claims.<sup>o</sup> Eilertsen teaches filtering of the digitized image of the coke sample by grayscale thresholding in order to process only a subset of the acquired image of a part of interest (Page 375, R. Column 4<sup>th</sup> Paragraph through Page 376, second paragraph, Line 7, upon detecting and storing the pixel values of *the brightness* of the acquired image, wherein the brightness is a

*reflective light intensity parameter* being the luster measurement, the computer continues to segment the image into several subsets by a filtering step of grayscale thresholding of the image). It would have been obvious to an ordinary skilled in the art to utilize Eillertsens method of filtering by thresholding with Matsuokas because, upon detection of the brightness value or luster measurement, the texture analysis of the coke is also a valuable analysis for substance classification of the coke.

#### ***Allowable Subject Matter***

6. Claims 2-4 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record specifically Matsuoka et al in view of Eilertsen do not teach the iterative process of luster measurement and averaging the extracted luster values to obtain the average luster value of the sample of claim 2; the setup procedure of sample placement for scanning of claim 3; and step of varying operating parameters of petroleum refining in order to alter the luster measurement of claim 6 combined with other features and elements of the claims.

7. The following is an examiner's statement of reasons for allowance: claims 7 and 8 are allowed because, the prior art of record specifically Matsuoka et al in view of Eilertsen does not teach creating calibration curve of optical density versus gray scale using the optical density scale image and determining the average scale value of the

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image and converting it to optical density using said calibration curve of claim 7 combined with other features and elements of the claim.

8. Claims 9-11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, and the objection set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Other prior art cited***

9. Prior art of record cited and not relied upon is considered pertinent to applicant's disclosure.

The US Patent 5,841,882 and US Patent 4,641,036 variously teach petroleum product imaging related to applicant's invention as claimed.

***Contact information***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shervin Nakhjavan whose telephone number is (703) 306-5916. The examiner can normally be reached on Monday through Friday from 8:00 am to 5:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau, can be reached at (703) 305-4706.

**Any response to this action should be mailed to:**

Assistant Commissioner for Patents  
Washington, DC 20231

**Or faxed to:**

(703) 872-9306 for ***formal*** communications, please mark "EXPEDITED PROCEDURE"

**or:**

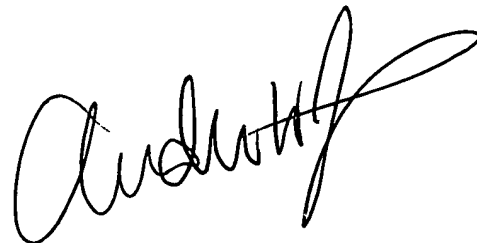
for ***informal*** or ***draft*** communications; please label "PROPOSED" or "DRAFT".

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**Hand delivered responses** should be brought to Crystal Park 2, 2121 Crystal drive, Arlington, VA, sixth floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Tech center 2700 customer service office **(703) 306-0377**.

Shervin Nakhjavan *S.N*  
Patent Examiner  
Group Art Unit 2621  
July 8, 2004.



**ANDREW W. JOHNS  
PRIMARY EXAMINER**